COOP'S TECHNOLOGY DIGEST

-A Timely Report On The World Of Communications-

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COOP'S TECHNOLOGY DIGEST

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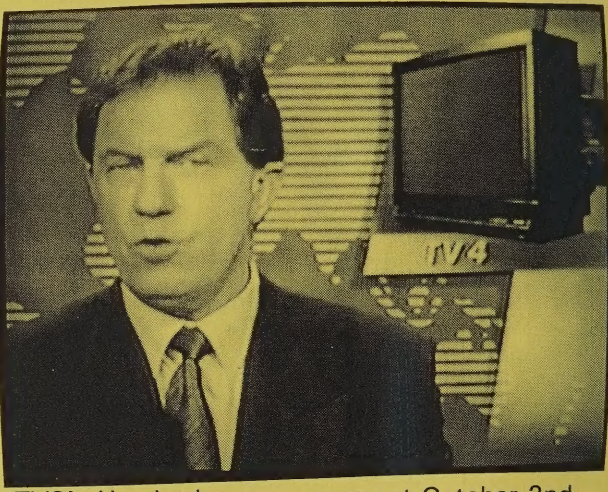
THE 'TV4' BOMBSHELL

TV3, majority owned and operated by Canadian based international broadcast firm CanWest, was perhaps forced into making what it considered a premature announcement of planning for a new "free to air" VHF channel television network by competitor TVNZ. Viewers of the 6PM News on TV1 October 1 were perhaps surprised to learn that TV3 was "planning to announce" a new "national television network." To that point (6.22pm) TV3 had made no mention of such plans in their own evening newscast. Presenter John Hawkesby, in closing the TV3 cast at 6.58pm urged viewers to return to TV3's evening news "tomorrow when TV3 will announce a new, national television network."



TV3's Hawkesby announcement October 2nd

The TV4 plan has all of the appearances of being rushed to judgement. It is entirely possible TVNZ's announcement pre-empted TV3's own plan to make public TV4. Even the service name, "TV4," would be called in question when religious broadcasting group United Christian Broadcasters pointed out they had announced their own intentions to launch a national "TV4 network" in February (CTD9602; p. 16) (**1**). TV3's Graeme Hunter, when questioned about the possible conflict, told a journalist for The Listener, "*We are relatively relaxed about what we call it.*" Indeed.

A news release offered by TV3 wrote:

> "*On air from mid-1997, the entertainment-focused channel, to be known as TV4, will broadcast on the VHF frequency, which ensures that most viewers will be able to receive the new signal without making any changes to their existing aerial.*"

The Listener paraphrased this statement to read, "*a rejigging of TV3's existing VHF frequencies.*" That is, initially, at the heart of the plan. How, in what was supposed to be a "full VHF band," can TV3 locate in 11 key markets new channels on which to operate TV4? At the very least this is a bit of significant spectrum engineering (**2**).

1/ In fact, United Christian Broadcasters may have failed to properly register "TV4" in their own name slightly complicating their legal right to use the term. At about the same time TV3 was announcing their plans for "TV4," UCB was holding serious meetings concerning their own future as a TV broadcaster in New Zealand.

2/ Phil Johnson of JDA Associates (Parnell, Auckland) has been the outside technical guru for TV3 and as a student of "spectrum engineering" undoubtedly played a key role in spotting the claimed "loopholes" in prior spectrum planning. If TVNZ had found the same "loopholes" it is unlikely they would have launched Horizon Pacific using UHF channels in Auckland, Hamilton, Wellington, Christchurch and Dunedin.

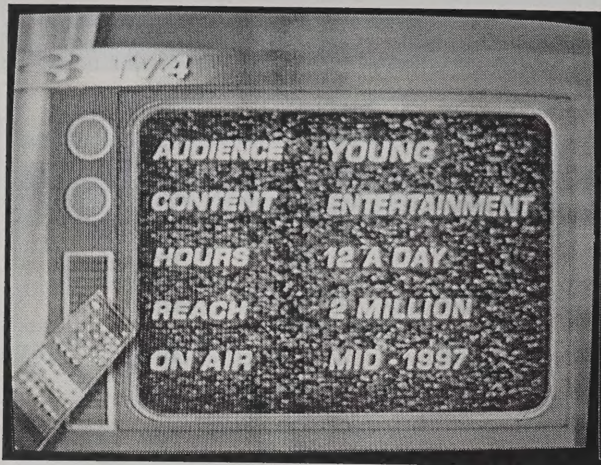
TV4 CHANNEL DETAIL - As currently planned at TV3

Market	Present Channels	Service	Polarisation	TV4 Channel	Polarisation
Auckland	2 4 7	TV1 TV2 TV3	Horizontal " "	9	Horizontal
Christchurch	3 6 8	TV1 TV2 TV3	Horizontal " "	11	Horizontal
Dunedin	2 4 10	TV1 TV2 TV3	Horizontal " "	11	Vertical (*)
Hamilton	1 3 9	TV1 TV2 TV3	Vertical " "	7	Vertical
Invercargill (**)	1 3 5 7	TV1 TV2 Mercury TV3	Horizontal " " "	11	Horizontal
Palmerston North	2 4 7	TV1 TV2 TV3	Vertical " "	11	Vertical
Rotorua	5 7 11	TV1 TV2 TV3	Horizontal " "	9	Horizontal
Tauranga	1 3 7	TV1 TV2 TV3	Vertical " "	10	Vertical
Timaru	7 1	TV1 TV2 TV3	Vertical " "	5	Vertical
Wellington	1 5 11	TV1 TV2 TV3	Horizontal " "	2	Horizontal
Whangarei	2 4 7	TV1 TV2 TV3	Vertical " "	10	Vertical

* Dunedin is the only market where viewers will require an antenna for the opposite polarity. **Invercargill with independent Mercury, will have five off-air VHF channels.

TV3 claimed they are now able to move ahead with a VHF-channelled TV4 plan because of the "deregulation of broadcast spectrum." Maurice Williamson appeared briefly in the TV3 on-air announcement to assume some of the credit for this event speaking of how regulatory impediments to a new national service had been removed by the government.

3/ Auckland, Christchurch, Dunedin, Hamilton, Invercargill, Palmerston North, Rotorua, Tauranga, Timaru, Wellington and Whangarei. TV3's Hunter expressed "regrets" about TV4 not reaching Hawke's Bay, Nelson/Blenheim and New Plymouth which he conceded "*would be covered in an ideal world*." TV3 has not given up on expanding beyond the 11 initial markets; planning is underway to expand TV4 into missing market areas.



Target demographics for TV 4

Maurice Williamson relating TV3 expansion to "deregulated environment"

The root of this claim resides within the creation of a mechanism that allowed the government to "sell off" without tender the operating channels in use by TVNZ and TV3. TVNZ paid government NZ$15.8m for twenty year management rights for 843 transmitters (i.e., channels) throughout the country. Under the terms of management rights, either TVNZ or TV3 can now do with these channels as they please. To some extent this gives them the ability to move transmitter sites, swap allocations about or even swap or trade with one another channel for channel. Any such changes are, however, subject to established engineering criteria concerning interference between channels (transmitters) or to non-TV services.

There are several "engineering rules" which must be respected. They are:

1) There must be a minimum "effective distance" between transmitters operating on the same VHF channel number;

2) There must be a similar distance between stations operating on immediately adjacent channel numbers (1 is not adjacent to any other channel, 2 and 3 are adjacent to one another; 3 and 4 are not adjacent although 4-11 are adjacent to the numbers immediately above and below).

Television channels are assigned by geographic area with transmission power and antenna height largely determining the coverage of a transmitter. TVNZ was first to use the spectrum and selected channels which were best suited to their needs (CTD 9403, p.3). After TVNZ's "blank slate" selection, TV3 was forced to fit in its channels (with the assistance of the Ministry of Commerce, which in turn relied upon BCL engineering - BCL being wholly owned by TVNZ).

A market area such as Auckland uses channels not selected for "primary transmission" as rebroadcast (translator) devices; Remuera, for example, shadowed from direct reception from the primary transmission site at Waiatarua, has translator coverage. Wellington presents unique challenges because of the exceptionally irregular terrain; there are 32 separate "translator" sites fed by the primary Wellington transmitters at Kaukau. A fully loaded translator site uses 6 channels; 3 on which it receives television, and 3 on which it transmits television. Because a translator is a low power, short distance coverage device, in a market such as Wellington the same frequencies can be used and reused by numerous translators with only modest amounts of interference.

TV3 claims TV4 will operate in 11 centres (**3**). At a minimum 11 new VHF channels must be found. In the case of Wellington where present TV1, TV2 and TV3 transmissions utilise a primary site and 32 translator locations, it is not likely TV4 can find anything approaching sufficient channels to create coverage that approximates that of the first three channels.

TV3 further claims in their public release, "most viewers will be able to receive the new signal without making any changes to their existing aerial." This is another important issue that will affect the marketing impact of TV4.

New Zealand has 11 VHF television channels (CTD 9407, p.11) but can utilise each channel number two times in a given geographic region; once using "vertical polarisation" and once using "horizontal polarisation." Most Auckland market antennas are for the horizontally polarised signals from Waiatarua. Hamilton market antennas, on the other hand, are "vertically polarised" to match the polarisation of the regional transmitters there. In a market where signals are horizontal, existing rooftop aerials discriminate against vertically polarised signals (and in reverse). However, there will be markets where it would be more practical to add a new channel using the polarisation that is opposite to that already in use there (such as vertical in Auckland or horizontal in Hamilton). In a market where viewers will require a new antenna the coverage of TV4 will suffer until viewers re-equip; essentially the same position Horizon Pacific finds itself in with homes that have not installed a UHF aerial.

Clever engineering, a change in regulatory overview, has made it possible for TV3 to expand into TV4. TV3 believes 60% of the population in New Zealand will have access to the TV4 service; a statement certain to be argued by TVNZ. TV3 will utilise Telecom NZ linking to reach the new transmitters (there had been the suggestion TV3 would switch to satellite, which TV3 sources deny noting, "*We have a number of years to run with our present Telecom agreement and we are pleased with the flexibility the agreement provides*").

Normally a new national television service creates a mini-boom for the aerial manufacturers, distributors and riggers. This is not likely to be the case with TV4. Dunedin is the only market which will clearly require new viewer antennas (channel 11, vertical) to augment the pre-existing horizontally polarised VHF antennas. In some other markets there will be a limited amount of "fine tuning" possible of consumer aerials. This would include:

Christchurch: Channel 11 is likely to be degraded on existing aerials intended for channels 3, 6 and 8. The primary Christchurch antenna supplier, Lincrad Aerials, has specialised in high gain antennas with limited bandwidth (channel) coverage. Channel 11 is going to be troublesome for users of Lincrad aerials designed for optimised performance on channels 3-8.

Invercargill: Existing aerials if of the optimised performance variety are for channels 1-3 and 7; channel 11 here will be degraded for the same reason as in Christchurch.

Palmerston North: Same analysis as Christchurch but not as severe a problem since most of the aerials sold into the market were not optimised to begin with (i.e., Aimco, Hills and other brands sold primarily on North Island, are not of the optimised design family).

Tauranga: Same analysis as Palmerston North.

Wellington: A unique problem. Channel 1 (TV1) and channel 2 (proposed channel 4) are not adjacent channels (a ham radio band exists between the two channels). Thus both can in fact be utilised in the same community (more commonly, Invercargill for example, 1 and 3 are co-used). Channels 1, 2 and 3 are located in "band I," our lowest frequency range. Antennas for band 1 are very difficult to implement if they are required to work on more than a single channel. Existing antennas using Wellington channel 1 (TV1) are going to work very poorly at channel 2. There could be a new model for Wellington designed that would compromise performance on channel 1 and add channel 2 in the process. Lacking that, TV4 on channel 2 in Wellington will have coverage problems. Add to this the 32 translator (relay) sites required to properly cover the region and the likelihood that few (if any) of these sites can be modified to add TV4 and you will have a significant cumulative coverage problem for TV4 in the Wellington market.

Cable Opportunity

Wellington's two competitive cable TV networks (First Media and Saturn) are in a position to bring TV4 into many homes via cable which would otherwise receive an inferior picture (or no picture at all) from the new network. Consumers faced with the cost of revamping their existing rooftop aerials to add TV4 capacity or going on cable to get TV4 (as well as the other exclusive to cable offerings) may well be tempted in favour of cable. There is a degree of irony about this.

TV3 statements hit hard on the "free to air" offerings of TV4, insinuating that viewers will have greater choice of programming through free to air and therefore should not be seduced by the lure of cable. That TV4 may need cable distribution of the new network in order to be "competitive" with the first three "national" channels is ironical.

But Why TV4?

TV3's announcement of TV4 is, they say, based upon "economic opportunity." Graeme Hunter noted, "*We're in the television business to make money. We have some owners who would like to make some money for their shareholders*." TV4, to be aimed at the demographic (age) group of 12 to 35, is likely to be raked over the coals by viewers who are already complaining about the lack of quality drama and other forms of "sophisticated" programming.

There may be a reason for the launch of TV4 that goes beyond the stated profit incentive. Digital. European and North American broadcasters have begun regular on-the-air MPEG digital terrestrial services. All are termed "equipment" or "engineering" tests at this time but each recognises that within the first decade of the 21st century, analogue transmissions will slowly disappear in favour of digital. New Zealand has no stated government policy for the implementation of digital here. And this presents a challenge to the existing broadcasters.

1) The sale of digital-capable TV receivers will be a slow ramp-up. This is the classic chicken and egg scenario whereas you need digital TV being broadcast to fuel the marketplace to purchase digital TV receivers. But the cost of launching digital, with no short-term profits likely, will cause broadcasters to approach the digital conversion very carefully.

2) To create digital transmission channels you must have spectrum space set aside for this purpose. In North America, the entire channel allocations table has recently been modified to allow existing analogue telecasters to build digital transmission facilities on a new channel. Each analogue channel user is to receive a second channel for digital purposes. In the UK, channels have been reassigned for digital and these channels in turn are being divided up amongst the existing analogue telecasters; spare digital capacity will be open to new entrants in UK terrestrial broadcasting.

In the deregulated New Zealand communications world, the Ministry of Commerce has shown no inclination to plan for digital spectrum space. This places TVNZ, TV3 and others in a difficult position. Without spectrum space set aside for digital, they are faced with creating their own spectrum for digital. It is not feasible to combine digital within the existing analogue channels (the two being basically incompatible). Therefore for TVNZ to launch digital will require that it engineer space within the existing VHF and UHF allocated-for-TV spectrum to engage in digital broadcasting. In a sense, this is precisely what TV3 has done in creating TV channel space for TV4.

If TV3 programs TV4 as they claim (for the 15-39 age group, 12 hours per day), they will be gaining use-rights to a second VHF TV channel in at least 11 major New Zealand markets. Fast forward now to say the year 2000 when terrestrial digital TV is far more developed and it is beginning to make sense to act decisively to make the conversion from analogue to digital. Built into the TV4 channels, TV3 would then have the ability to turn the TV4 channels from another free to air analogue channel into a "digital bouquet" service. Yes - TV4 would have to become a digital service in this scenario, but in the process because digital allows the transmission of between 4 and 8 separate programme channels in the spectrum space now required for a single analogue signal, TV3 could also expand by adding additional (digital only) programme services (i.e., TV5, TV6, and TV7 at a minimum).

For TVNZ to engage in the same lateral thinking would require they take either TV1 or TV2 off the air in each of their existing markets in order to convert the previous analogue spectrum space into digital space. It will be far more difficult for TVNZ to remove either TV1 or TV2 from the airwaves at the early stages of digital development than it will be for TV3 to take TV4 off the air in favour of digital. On the other hand - taking the Horizon Pacific stations off the air for the digital conversion could be quite attractive to TVNZ.

SOUTH PACIFIC REGION SATELLITE & CABLE SHOW

(SPRSCS '97)

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FIRST MEDIA - Will Change The Way You Look At Television

CTD 9606 reported on the first indication of the marketing plan for Telecom NZ's First Media cable television project (p. 17) while CTD 9607 reported on the status of competitor Saturn's telephony plan (p. 15). Additional detail concerning the First Media operation is now available.

A 32 page exceptionally impressive four colour booklet now being distributed by First Media sales consultants does much to dispel any belief that Telecom NZ is not approaching their cable television marketing plan seriously. The booklet, itself sizeable enough in format (27.5cm by 29.5cm) to be a "coffee table" display book, begins with the pointed introduction:

> "*Welcome to the world of First Media Television, offering you a range of entertainment and channel options that will change the way you look at television.*"

The First Media cable plant is hybrid fibre plus coaxial cable, capable of allowing approximately 60 analogue channels to flow in the forward direction (i.e., into the subscriber's home) and reserving an additional 250 MHz for narrowband services including but not limited to providing homes with a direct flat-rate connection to unlimited use of Internet (**1**).

The First Media booklet lists several traditionally available-on-cable services which are now or are planned to be available in the next six months. A summary of those service offerings appears here in table form.

Programme Service	Number of Channels	Notes
CNN	1	Also on Sky, Saturn
CNBC	1	Also on Saturn
TCSI Singapore	1	Sold as optional
The Box	1	Viewer choice music videos
ITV	1	Documentaries, education
Local Link	1	Community activities
1st Entertainment	1	Off-network series, specials
TV1	1	TVNZ
TV2	1	TVNZ
Horizon Pacific	1	TVNZ
Kids TV	1	7am-9PM
Weather Watch	1	Weather forecast
First Movies	36-40	NVOD (see text)

In the table several channels are conspicuous by their absence. The booklet describes "The Cartoon Channel" and "TNT Movies." At this point, neither of those channels is actually available to subscribers. The reason is of interest. Until this past August TNT/Cartoons was dealing directly with cable affiliates out of their the Turner International Sydney office. Then NZ Sky Networks reached agreement with Turner to be the "representative" for this two-in-one channel service for all NZ cable operators not previously under contract directly with Turner (CTD 9607, p. 5). Sky has a similar representative arrangement with CNN and (the) Discovery Channel. Apparently the switch from dealing directly with Turner in Sydney and dealing with Turner through Sky occurred at a time when the First Media booklet was beyond change but not too late for modification. In their presentation, First Media notes about TNT and Cartoons: "To Be Confirmed." To date, First Media has not been able to clear the "Sky hurdle" in "confirming" their carriage of either service.

Another interesting "missing channel" is TV3. The table here is not in error; TV3 does not appear on First Media cable. You might ponder why and suspect some sort of machiavellian plot that involves TV3 competitor TVNZ. "*Not so*" explains a

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1/ On October 25 First Media made an announcement concerning their plans to offer broadband data communications (including Internet) to cable subscribing homes. Before a group of stock portfolio analysts in Wellington, Group Manager Ken Rayward outlined Beta testing of the Internet connection through cable. The test programme, to begin early in 1997, will allow up to several hundred cable homes in either Wellington or Auckland to participate in Internet and other telenet offerings through their existing cable set-top converter/modem units. Rayward anticipates the test will be a short cycle with commercial rollout of high speed data services to follow quite rapidly.

spokesperson for First Media. "*It comes down to a difference in philosophy. We do not believe* (the 1994 Copyright Act not withstanding) *there should be payment for free to air television services carried by cable.*" Other cable operators have often made an identical argument, pointing out that by extracting a per home fee for cable carriage broadcasters may end up not being carried on cable services. TV3 is not carried by First Media cable because TV3 wants (too much) money for its copyright "rights." **(2)**

The only non-English language programming channel currently carried by First Media is the Singapore based TCSI which presently produces approximately 18 hours per day (satellite delivered, digital format, from PAS-2) in Mandarin with Cantonese sub-titles. First Media plans to add daily newscasts in Cantonese from Hong Kong and Taiwan to this service during the first quarter of 1997. Other ethnic groups? The service rollout initially in the Auckland market begins in Howick, a suburb that is heavily populated with Chinese immigrants, and includes East Tamaki. **(3)** As the service grows into new areas, what about Indian language programming?

Daniel Guillaume, attached to the French Embassy (Wellington) was told by First Media, "*There is a channel capacity problem. First Media does not have the capacity to handle a variety of ethnic groups each with their own channel.*" French language television is available on several systems including competitor Saturn in the Wellington market. Paris based TV5 has been so anxious to have their (24 hour) service carried from satellite in New Zealand they have provided digital decoders for reception to cable firms.

1st Entertainment

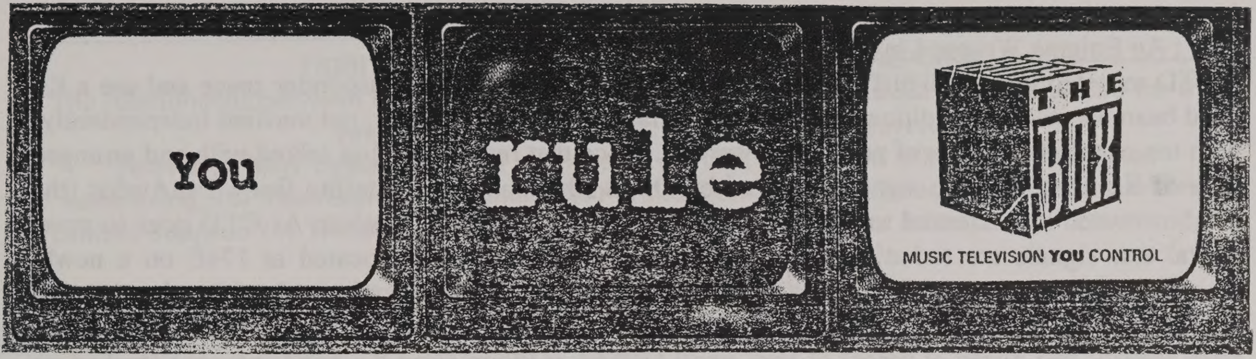
First Media, like many budding New Zealand cable firms, is finding English language Kiwi-acceptable programme sourcing difficult (see CTD 9607, p. 2). To rectify this problem, they have created "1st Entertainment," a custom built channel made up of programming sourced from many world centres. It can be compared in technical ways to Sky's creation of the Orange service although the programming choices would be more akin to TV1 than the TV2-like Orange selection. Included initially is off-TVNZ Picket Fences, plus The Paper Chase, Alas Smith and Jones, Anything but Love, Harry Enfield & Friends, Drama Showcase and selected programmes taken from NBC Asia via satellite: Jay Leno Tonight Show and Selina Scott are included. One lesson they seem to have adopted: Sylvester (Pat) Weaver of NBC (USA) fame built his hugely successful prime time evening schedule in the early 50s around scheduling comedy every night at 8pm. Weaver believed he could anchor the entire evening fare around an after dinner comedy slot.

Review the First Media channel listing (page 7, here). Note that if all of the present channels are summed, 52 of their 60 channel capacity is spoken for. Now add in Cartoons and TNT (each as a stand alone service) and we are pushing hard on the 60 (analogue) channel capacity. Perhaps you overlooked the 36-40 (analogue) channels which First Media is "reserving" for First Movies.

First Movies will employ a relatively new rental movie delivery technique abbreviated NVOD. VOD stands for "video on demand" and adding the N makes it "near video on demand." The concept, tested in North America and Europe and shortly to be added to Japanese and Indian satellite pay TV services, is that movie rights owners are anxious to maximise their income from film product. To do this they first release films to theatres. Next the films are released to video tape stores for rental. In a NVOD marketplace, after the rental agencies the movies then go to cable (or satellite) NVOD use. Sky and other bulk subscription pay TV services (including HBO, Showtime on satellite and cable elsewhere) receive the films after NVOD.

2/ TV3 may well reconsider its position by mid 1997 when it launches TV4 which, in markets such as Wellington, will need cable's assistance to reach homes unable to receive the signal directly. Terrestrial broadcasters in negotiating cable carriage contracts often request more than simply money for existing programming channels; at least one firm also demands that cable "give them" a free to use channel for their own future use as a part of the carriage agreement.

3/ In Wellington, First Media has begun serving homes in the Lower Hutt Valley. Saturn is also operating in the same area although to date there are no known areas where homes have a choice between First Media or Saturn. Direct competition is coming, but is not yet here.



"You rule the box" may become a promotional catch phrase for First Media cable.

Movie value is usually perceived as a function of "time." The longer the film has been out of its theatre run, the lower the film value. Sky Network typically has first access to a particular film 6 months after the film has been offered through rental shops. NVOD comes into the stream at the 3 month after-video-shop point which means typically NVOD has the opportunity to offer films to cable subscribers 3 months (or more) before they would anticipate seeing the same film through Sky. That "lead time" is what gives NVOD value above and beyond its eventual appearance on Sky.

First Media plans to operate "9 cinemas" which means they will have 9 films showing at any point in time. Each film will appear on one or more channels. "Addams Family Values" starts at 8PM on channel 20; it restarts at 8.30pm on channel 21, 9pm on channel 22, and 9.30pm on channel 24. At 10pm it restarts anew on channel 20. Meanwhile on channel 25 at 8pm "Sliver" starts, followed at 8.30pm on channel 26, 9pm on channel 27, 9.30pm on channel 28. At 10pm it recycles on channel 25.

With nine films each starting anew at 30 minute intervals, a viewer can tune in the movie of his or her choice with a new start time every 30 minutes. And at any point he or she will have nine separate films to select from.

Price? First Media says, "*It will be competitive to the pricing found at video rental stores for the same genre and age movie when the movie is going through the video store cycle.*" Interpretation? Ninety days later, same approximate price only it will be delivered by cable to the viewing home rather than having to go to the store to pick it up (and return it).

Critics of the First Media plan worry Telecom NZ is placing too many of its channels into the NVOD basket. Upwards of 60% of the system channel capacity will be used for NVOD and First Media is already advising other potential cable carriage services that it "is running out of bandwidth." And in fact, while digital cable delivery hardware does not yet exist in quantity (the very first is being delivered this month to TCI systems in North America), First Media engineering is already studying what will be required for them to "go digital" as well with their systems here. The advantage of being digital within cable is simply this; from 400 to 1,000% increase in programme carriage capacity. Or, 60 channel capacity becomes 240 to 600 programme channel capacity.

NVOD is scheduled to launch following delivery late this year of "*the first hard drive outside of North America.*" A hard drive will place all 9 movies inside of a single "box" and eliminate the 36 to 40 primary analogue format tape machines required. That alone is a significant technology step because movies on hard drive have at least the capacity to retain a higher image quality than one expects to receive from typical S-VHS tape decks. Another advantage is that the hard drive system need only hold the nine movies since each movie can be individually accessed and started without regard to an earlier start time of the same movie. Tape cannot do this: A movie with four start times requires four copies of the movie and four tape machines to play it back at staggered starts.

First Media is creating an entertainment service which is only very loosely related to what traditionalists would define as "cable TV." The basic monthly fee is $14.99 (and works upward) but may be designed more to "get the cable into the home" than as a self-contained "profit centre." From the outset Telecom has warned us, "*Television is important to us, but it is only a start.*" The game is bandwidth and we can be certain nothing they do with television is likely to compromise their future options for the most efficient use of the bandwidth commodity.

SKY: An Enigma Wrapped In A Smoke Signal

CTD reported in our August issue (CTD 9606) Sky plans to lease transponder space and use a Ku band beam to reach an additional 300,000 potential homes (their number, not verified independently) with ten or more channels of programme service. Since that report, Sky has talked with and arranged tests of Ku band satellite signals operated by Optus (the Australian satellite firm), PanAmSat (the Hughes owned international satellite firm; see CTD 9607, p. 9) and Intelsat. As CTD goes to press digital test signals are radiating into New Zealand on Intelsat I701 located at 174E on a newly activated Ku "spot beam." Tests have been conducted across North Island (week of October 14) and are being conducted at Dunedin the week of October 21st. All of this activity is supported by a vast array (nearly two dozen at times) of very small through medium sized Ku band antennas stacked up across the back parking alley at Sky's Auckland Panorama Drive location in Auckland.

Two prominent journals are suggesting Sky is in the midst of serious negotiations with Rupert Murdoch controlled INL. Murdoch's News Corp owns 49% of INL, publisher of various TV Guide and newspaper products in New Zealand. Murdoch was in New Zealand earlier this year to visit INL and a computer software firm he also owns in Wellington.

National Business Review in their October 18 edition reported, "*Time Warner and TCI just seem to want out*" (of Sky). "*Time Warner is reported to be under pressure to cuts its debt, estimated at US$17.5 billion after its $6.7 billion purchase of Turner Broadcasting System. TCI, the largest cable operator in the US, is gearing up to go digital. Both are in fierce competition with Mr. Murdoch's News Corporation. Billions are at stake.*" NBR also reported that Sky lost NZ$9,808,000 on a turnover of NZ$104,660,000 in the year ending December 31 (1995).

The New Zealand Herald business section on Monday October 21 went further with the analysis of Sky's financial position. It reported, (the 1995 loss) "*took the deficit accumulated since the May 1991 launch to $128 million. Those losses wiped out the shareholders' funds some time ago, leaving a deficiency of capital and reserves of $52.6 million.*"

The Sky Network Television Limited Director's Report for the year ended December 31, 1995 says many other revealing things about the condition of the nation's pay TV service provider. For example:

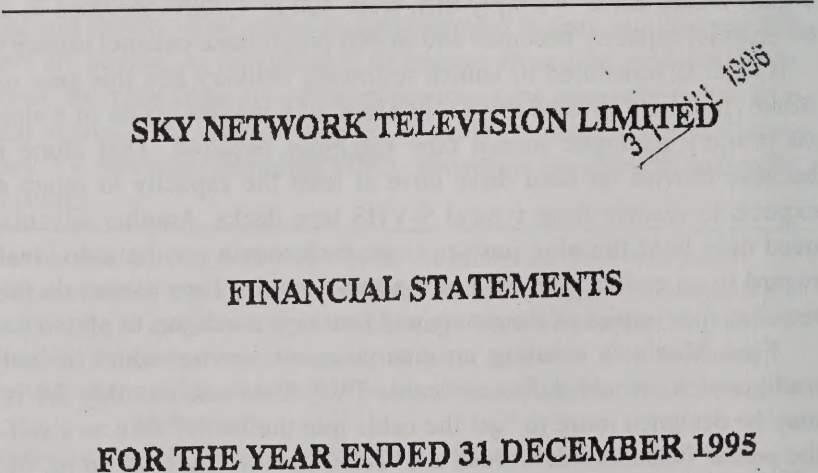
✓ No dividend was proposed or declared during the year (1995)

✓ As of the end of 1995, Sky owed creditors $54,236,000 and had borrowed $11,141,000 for a current liability total of $65,377,000.

✓ Borrowed money, from stockholders and banks, amounted to $11,609,000 to be repaid in less than 1 year, $24,200,000 to be repaid within 1 to 2 years, and $111,513,000 to be repaid within 2-5 years.

✓ Of the borrowed money, $28,740,000 was owed to shareholders, $111,673,000 was owed to banks and other lending institutions, and $5,441,000 represented liabilities associated with "leases." Note that leases might include equipment leases, transmission site leases, vehicle leases, furnishing leases and studio-office leases. The financial statement also reveals Sky was paying between 8.7 and 14.6% per annum for interest on borrowed funds.

✓ The deficiency of reserves and capital at the end of 1995 totalled $52,575,000. The statement reported, "*The shareholders have undertaken to provide further funding to the group. The shareholders have also provided an undertaking that advances and accrued interest of $29,740,447 owing at 31 December 1995 are subordinated in favour of the group's bankers. The subordination is for a period to 1999.*"



SKY NETWORK TELEVISION LIMITED

31 VII 1996

FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 1995

SKY's Financial Statements for year ending 31 December 1995 were completed by the board 30 April 1996, but not received by government until 31 July.

-TIDBITS GLEANED FROM THE SKY ANNUAL REPORT-

The relationship between minority stock holder TVNZ (plus its subsidiary BCL) and Sky for the year ending December 31, 1995 was as follows.

Television New Zealand Limited supplied Sky with (1) Satellite linking, (2) Television advertising, (3) Television programming, (4) Production services. Broadcast Communications Limited supplied (1) Transmission sites and equipment, (2) inter-site linking. For these services Sky paid:

TVNZ / (1) $1,931,000 for satellite linking, (2) $2,535,000 for television advertising, (3) $509,000 for programming, (4) $693,000 for production services and (5) $246,000 for "other."

BCL / (1) (2) $7,681,000 for "transmission sites, equipment and linking."

As reported in CTD 9607, TVNZ had a most recent year net income of $43,500,000 of which $30,200,000 went to the government. The total paid to TVNZ (and BCL) by Sky was $13,595,000 or 31.2% of the total "profit" at TVNZ.

None of this paints the image of a healthy company earning a reasonable return for its stockholders. In fact, taken as a whole, the loss between May 1991 start-up and December 31, 1995 represents a daily loss of NZ$75,008.79 (accumulated deficit of $128,065,000 divided by 1,706 days). By comparison CTD for May 1996 reported the seriously troubled Australian Galaxy service required A$692,896 more than its then receipts each day to stay open (CTD 9603, p. 8). Thus the previously not revealed losses at Sky Network amount to 10.83% of the ongoing losses of Galaxy on a day for day loss comparison. At that time Galaxy was trying to arrange A$250,000,000 as a "rescue package" to keep its doors open. On a national population basis, Sky losses for New Zealand when compared to Galaxy losses for Australia actually exceed the much reported Galaxy loss. So why hasn't Sky been previously found to be seriously short of an operating profit, or, break even?

Part of the explanation would be found in the "privately held status of Sky" versus the public plus private investment in Galaxy. As a corporation trading on the Australian exchange, Galaxy was required to make public their financial status at regular intervals. Sky, privately owned (1), has been more successful at concealing their financial status. The 1995 Director's Report reads at the opening:

"*In accordance with Section 161 of the Companies Act of 1955, the Directors present the following report on the Statements of Financial Position and Financial Performance and operations of the Company for the year ended 31 December 1995.*" Copies of the report were initially obtained by National Business Review, and subsequently by The New Zealand Herald. One of the most sought after documents within the communications industry as we go to press are copies of this report; now widely available through the miracle of fax and duplicating machines.

SO - Is there any truth relating to the report appearing in National Business Review and subsequently in the October 21st edition of The New Zealand Herald? Both INL and Sky have verified that talks have been underway; INL says, "*For quite some time*." INL is also reported as indicating the first move originated with them, not Sky, and that they were conducting the negotiations with Sky without any specific approval nor instructions from the Murdoch controlled News Corporation. Not everyone accepts these INL statements as gospel.

Murdoch made a serious attempt to gain control of the failing Galaxy service during May through August (CTD 9606, p 17). He lost this bid. Sky's only serious association with News Corporation at the present time is a contract through News Datacom which provides Sky with the Videocrypt "smart card" devices utilised to control the conditional access to Sky decoder units. Sky reportedly pays US$17.50 per card to News Datacom, is presently utilising Card Series 3 and one source advises

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1/ Sky ownership from CTD 9508: Hong Kong Partners 51.13% (made up of Ameritech, Bell Atlantic, TCI and Time Warner). Buying out TCI and Time could result in controlling 51.13% which in turn hands the management reins to the 50% owner of Hong Kong Partners. Then, 16.20% owned by Television New Zealand, 15.85% owned by Sky originators Craig Heatley and Terry Jarvis, 8.80% by Todd Communications, 7.51% owned by Tappenden Construction (Alan Gibbs, Trevor Farmer) and 0.41% owned by US sports network ESPN (which is in turn controlled by American TV network ABC).

-MORE / Tidbits Gleaned-

Nation Business Review suggests Sky spends $700 to market and equip each new home with an aerial and decoder. At the end of 1995, Sky claimed approximately 200,000 subscribers. The year end statement reported $73,820,000 in non-depreciated investment in decoders and $64,758,000 in "aerial costs." This works out to $369 per decoder, a number that is at variance with a number reported in CTD 9407 (p. 41) where with the assistance of the statistics maintained by the agency that monitors imports we had calculated Sky was spending $266.51 for each decoder during 1993. The discrepancy may be reflected in an inventory of decoders on hand but not installed in subscriber homes. The statement also notes, "*The company has a commitment to purchase (additional) decoders of $2,000,900, smartcards $NIL (1994 decoders $4,797,000, smartcards $185,000)*." At NZ$25.03 per smartcard cost, $185,000 in new smartcards during 1994 amounts to 7,391 new cards bought. "Aerial costs" are a bit of a surprise at $64,758,000 in a then-universe approximating 200,000 subscribers,. This calculates to $324 per subscriber installed, a number far greater than the often advertised "special installation" pricing that has in the past dipped to as low as $0.99. The actual cost of the aerial and cable comes in under $60 which leaves $260 for "labour" and "miscellaneous." Yet the typical Sky (UHF) aerial rigger has been paid on average under $100 per aerial system installed. By our calculation approximately 50% of the costs charged to the aerial portion are not explainable given the numbers known.

If, in fact, Sky does have something more than $300 invested in each aerial installation, their policy of "walking away from" aerials when subscribers "churn" (discontinue the service) raises serious questions. The answer to the apparent high aerial costs may in fact be buried within the "churn"; homes that tried Sky and then discontinued it would greatly inflate the universe of aerials installed at Sky expense, which in turn will bring the calculated cost per aerial down significantly. This could be a backdoor method of calculating their churn from 1991 through the end of 1995. If the proper cost for each operating aerial is in the region of $160, but for a universe of 200,000 homes they have $324 per home in aerial costs, how many homes have trialled Sky and then inherited the aerials which Sky continues to carry on the books? That number would be the "churn" or homes UHF aerial equipped at Sky expense but not currently Sky customers. To bring the $324 number down to $160 calculates that there are 400,000 homes with Sky aerials (December 1995) although only half of the homes are subscribing. In other words, Sky has experienced a "churn" of 50% (half of the homes once subscribing no longer do so).

CTD that Sky has not followed the original contract with News Datacom which allegedly requires that Sky change out the cards for a newer series (i.e., more sophisticated version) at stated intervals. At US$17.50 per card, in a universe of 265,000 homes, if Sky did change out the cards once per year, it would be spending NZ$25.03 per subscriber per year or NZ$6,632,950 annually for smartcard updates. Had Sky upgraded the smartcards during 1995, for example, its losses could have been $16,432,950 for the year rather than $9,800,000. Sky has changed cards two times following the initial card purchase in 1991. **(2)**

2/ Sky has shown only sporadic interest in piracy, an issue directly related to smartcards and how often they are upgraded. A report in CTD 9404 (p. 36) reported on the potential problem and we published a Sky statement in response that said, "*Although we are aware that piracy hackers have caused some problems in Europe to the Videocrypt Smartcard system which we share* (in common) *with European television programme sellers, this has not been a problem in New Zealand.*" CTD 9405 reported on an Internet "posting" of hacking instructions for Sky here which prompted Sky to then state, "*The series of (smart) cards we utilise here and the algorithm that is being used in New Zealand has never been breached.*" The software program distributed on Internet (where it resides to this day) was hackingly named OMI-GOD.
CTD 9407 (p. 38) reported BSkyB satellite services believed 200,000 illegal users existed in the UK through the OMI-GOD (or similar programmes) distribution by hackers. BSkyB presently utilises a "Series 10" smartcard, 7 levels advanced from the Sky series 3. Each new level has been in response to hackers breaking a current level card. That Sky has "no piracy problem" in New Zealand is highly unlikely.

-STILL MORE / Tidbits Gleaned-

Sky's product is television programming. The cost associated with acquisition of that programming has always been a closely guarded inner-sanctum number; the 1995 report gives only fleeting insight. During 1995, Sky spent $369,000 for "New programming." That number alone means nothing. The statement footnotes do add, "*In the normal course of business the company has entered into agreements for the purchase of programme rights for various periods up to 1999 amounting to approximately $41 million. The Directors believe future additional subscriber revenue will result from the company having access to these programme rights.*" So how much does Sky pay out per year for programming rights? No direct answer but a small clue. The $41 million commitment through 1999 was, in 1994, $55 million. Subtract and you have a declining commitment of $14 million during 1995; or $1,167,000 per month. Now take the $41 million and go forward (1996, 1997, 1998, and part of 1999) ; 42 months at $976,190 per month. It may not be dead-on but the calculations do self-check.

NOW - on the basis of 200,000 subscribers we have a per subscriber cost for programming commitments per month of $5.83 during 1995. If CNN is costing in the range of $0.33 per home per month, ESPN in the range of $0.40 per home per month, Discovery in the range of $0.35 that leaves us with package programming for Orange and Movies. Sky has always maintained the cost for the (HBO) Movie Channel was far and away greater than the cost for not only any other single channel but in fact all of the other channels combined.

INL has been vocal about desiring to add television to its existing newspaper (and periodical) publication family. Murdoch controls more television programming world-wide than any other investor. There is at least the suspicion that INL's move to acquire controlling or at least operating management control of Sky is all about expansion of the Murdoch television empire.

Here is the scenario unfolding.

1) On July 1, 1997, existing Australian regulations, which prevent pay television firms from outside of Australian selling programmes directly to Australian viewers, expires. After July 1, 1997 a satellite television service headquartered in New Zealand will be able to compete directly with Galaxy and other pay TV firms openly in the Australian marketplace.

2) There is little doubt that at least some of the present Sky Network shareholding firms want "out." If Murdoch directly or indirectly takes out TCI and Time, he has gained operational control of Sky. Any sale by Time and TCI is also likely to attract additional privately held stock from at least some other stockholders.

3) Sky holds valuable programming contracts with ESPN, CNN, Discovery, TNT/Cartoons and most important of all, it owns the rights to New Zealand Rugby. Add to this Murdoch's stable of programme channels, 11 of which initiated service into Indonesia and SE Asia on September 19th. With rights now held by Sky, and with rights held or controlled by Murdoch, he could easily support a 20 (or 30 or 40) channel satellite delivered pay TV service headquartered in New Zealand but serving (by appropriate satellite selection) all of Australia as well. It is of interest that Murdoch's European and North American satellite pay TV firms will be delivering in excess of 100 programme channels to viewers by late in 1997 - early 1998.

By the same token, Sky itself without Murdoch's help could begin serving Australia after July 1 (1997). So could virtually any other pay TV programmer setting up shop in New Zealand. What makes this a ripe deal for Murdoch/INL is the progress already made by Murdoch controlled firms which today are serving via satellite viewers throughout Asia, Europe, South America and within the next year India and Japan. And in 1998, North America. It is also worth noting that while Sky may have lost NZ$128 million to date, and to be sure the Galaxy experience with pay TV operations in Australia has been a textbook on "what not to do," that Murdoch continues to be more concerned with tying up programming rights than any other aspect of his business. By purchasing Sky, and expanding it to be a trans-Tasman service, he acquires additional programming rights which he can then export out of the Pacific to his other satellite pay TV programming services throughout the world.

Thus there is more "value in Sky" here than merely the possible cash flow that it might one day create if run more prudently. It is rumoured, somewhat authenticated by the Sky financial report, that

Sky may have paid $20 million for the Rugby rights for New Zealand alone. The quality of those Rugby telecasts exported to Europe, North America, South America and Asia would make this asset and others acquired be revalued at ten to fifteen times as much outside of New Zealand.

It is being further suggested that Sky's announcement to "go to satellite" this past August was in fact a carefully orchestrated effort to attract potential buyers. And Murdoch would be at the top of the "target list" to be attracted by the move. Painfully aware that after July 1, 1997 a New Zealand based pay TV operation could be marketed within Australia, there is no question that the Sky "satellite announcement" would raise a red flag at News Corporation.

IF The Deal Goes Ahead-

Programming. Murdoch has his own news channel (launched in USA on cable in October); good-bye, as rapidly as possible, CNN. Sport. A more difficult situation given the multiple sources from which Sky acquires product. Look for selective "pruning" of the Sky sport channel with more and more input coming from Murdoch's global holdings. Discovery. Probably "safe" for now as there is no comparable product in the Murdoch stable. Orange. On the hit list. Murdoch has STAR Plus, an orange-like channel that is far less expensive to produce than Orange and already in existence. Why create a new channel expensively if you can substitute an existing service used elsewhere for the cost of a satellite link? The recent TNT/Cartoon Turner link. There is no greater dislike for Murdoch than Ted Turner. Adios the Turner agreement.

Staff. Murdoch never allows the existing higher level staff to remain for very long. Engineering is safer than business management. Ultimately, expect an Australian to head the Sky effort here.

Equipment. Sky has pointedly not made a decision concerning (**a**) selection of a satellite, and, (**b**) selection of hardware. The satellite decision will telegraph the post July 1997 intention of the Sky service; if the satellite chosen provides nation-wide coverage of Australia, New Zealand will quickly become an "*...and we ALSO cover New Zealand.*" The hardware (brand and format of digital) is a foregone conclusion with Murdoch in charge; Pace hardware (he uses nothing else).

Pricing. No major changes other than the likelihood that satellite IRD units will be subsidised from Pace (as he is doing in Indonesia and India) to reduce the cost to the consumer of the "dish package." No, unlike Galaxy or a plan at least considered at Sky, Murdoch will have nothing to do with providing the hardware to viewers as a part of the package. Consumers will be responsible for acquiring their own hardware system.

Programme Packaging. It will be largely ala' carte if his European, Asian and North American formats are followed. Viewers will select which programme channels they wish to subscribe to from a sizeable universe.

Relationship with TVNZ. If TVNZ remains a stockholder (no guarantees here; TVNZ has been disposing of investments such as it holds in Sky for the past 18 months), they could find their relationship with a Murdoch managed Sky far more difficult. For example, Sky "accommodates" stockholder TVNZ by purchasing from them satellite link services ($1,931,000 in 1995; see "Tidbits" p. 11) which means Sky does not have its own satellite receiving dishes to take the various satellite feeds (ESPN, CNN, Discovery et al). The money Sky spent in 1995 alone for "satellite and linking costs" would purchase 14 dishes of ten metre size at the most recent New Zealand installed price of $135,000 (paid by TV3). That Murdoch's savvy business people would not install their own satellite dishes rather than continuing to pay TVNZ these fees is a non-decision.

Relationship with Ameritech and Bell Atlantic. An unknown. Murdoch is partners with Australia's major telephone network supplier in Foxtel there. He is rumoured not to be terribly pleased with the way the telephone bureaucracy moves (slowly, if at all) and probably would just as soon send the two American telephone companies packing. In the end it will come down to dollars and cents; how much will it cost to buy them out, versus allowing them to "hang around" as a thorn in his side.

Name. Anything other that PSkyB (Pacific Sky Broadcasting) is a long shot.

INL's public announcement October 18th that it was negotiating to buy a "substantial holding" in Sky pushed existing Sky spokespeople to the limit. INL stock climbed a modest but understandable 5% on news of the discussions underway. It may not happen - but we now have access to Sky information we never previously had even if it does not take place.

TECHNOLOGY BYTES

...BITS and BYTES you may have missed in the rush to make a dollar ...

October 31, 1996 / Issue 96-08-31

Satellite TV and Radio

New entrants in the MPEG-2 compatible digital TV receiver field are appearing around the globe leading to speculation that within 90 days the present shortage of equipment will have been resolved. The roadblock to receivers has been largely caused by patent rights held by conditional access creator firm Irdeto which to date has managed to keep manufacturers who are not licensed for their system out of the marketplace. It now appears clever engineering has worked around this impasse. Until mid-October, the only receiver sources were those building to Irdeto license, firms including Pace and Panasat (South Africa). A slow trickle of Irdeto licensed and equipped receivers (Pace DVR-500, Panasat IRD520) has dribbled into the Pacific since July but at high price per unit (typically A/NZ$1600 range at retail) and in the case of Panasat a temperamental receiver unit. A Pace unit especially created for the free-to-air MPEG-2 services on AsiaSat (European bouquet) has been promised since May but to date has failed to materialise. The first to announce a competitive unit at lower price is Satellite Systems 2000, an Omanian firm which appears to be a distributor for a product originally created for use by cable TV and other allied industries. SS2000's Joris Van Pelt (tel/fax +968-597-893) claims the receiver is shipped pre-programmed with the European bouquet service channels (Deutsche Welle, RTVE, RAI International, TV5 and MCM + 12 radio service channels) locked into memory; simply take out of the box, plug-in and play. Their suggested pricing is US$999 but Australian distributor Skandia Electronics (tel +61-3-9819-2466, fax +61-3-9819-4281) believes the unit can be sold to authorised satellite TV dealers for approximately A$740. Skandia at our press deadline was attempting to increase the "take out of the box memory" to include a number of other FTA MPEG-2 service channels on AsiaSat 2. On October 26 a UK firm advised sister publication SatFACTS Monthly of the availability of the much anticipated Nokia DVB9500 S MPEG receiver. The UK source shortly arranged for distribution in the Pacific through Baysat in Hastings (64-6-878-9081) but pricing has not been determined. The Nokia box suppliers claim it will function with transmissions created by Philips, NTL/DMV and Thomson. This would appear to include all of the AsiaSat 2 MPEG services not operating with conditional access as well as the NBC services on PAS-2. Finally, three additional firms with their own receivers are advising "delivery in late November / early December" for models not previously available.

The Scientific-Atlanta model D9223 MPEG digital receiver, subject of much controversy since its first arrival in May, has entered a new plateau of accommodation to user needs. As reported in CTD August (9606; p. 10) and SatFACTS for September (p. 20), S-A had assisted satellite enthusiast Robin Colquhoun of Auckland to modify his receiver to access a number of non S-A programme streams. Prior to that happening, the S-A receiver appeared capable of only working with S-A equipped uplink transmissions. Early in October S-A's Sydney office advised that a "*new software version*" of the D9223 was now being "*routinely shipped*" by their office and that it would, or could, be used to receive FTA MPEG-2 transmissions from a number of services (including those on AsiaSat). Thus the modifications to software first shared with Colquhoun now appear to be available to anyone purchasing the latest version D9223 unit. However, S-A Sydney is not responding to requests from present users regarding having their older style D9223's "software modified" (S-A has a service department toll free number accessible from NZ: 0800-444-151). This creates a dilemma for receiver purchasers: The ability of the Nokia, Systems 2000 and other newer receivers to access S-A PowerVu format services is unknown and will remain that way until sufficient of the new receiver models are in the hands of skilled users in the Pacific. The Systems 2000 and Nokia have memory ability such that once the digital parameters for a particular service are entered the user need only select the appropriate (remote control accessed) service and the receiver does the rest. The S-A software requires that each time the service source is changed the user must re-enter all of the relevant MPEG parameters. A Korean source reporting to CTD advises they have developed a PC programme that directs the D9223 through a back deck RS232 port and eliminates the need for re-entry of all MPEG parameters when changing input sources. However, not every user will be willing to dedicate a PC to the operation of his satellite receiver! The bottom line remains this: Until there is a receiver in the marketplace, priced under NZ$1,000 at the retail level, which can access both FTA and PowerVu format services, there is still room for improvement.

Mainstay satellite Rimsat 130E was to be closed down at that location and moved to 153E. In preparation for the move, New Zealand has lost service from cult-followed RAJ-TV in Madras. In Mid-October, the Russian operators of 130E began clearing out the largely Indian cable TV users of Rimsat 130E, moving RAJ to 142.4E and to a northern (hemispheric) beam which is not visible in New Zealand (nor in most of Australia). By October 25th all of the 130E users were to be moved (Laos TV was the last to vacate 130E). Over the period October 26-27 the Russians planned to fly the satellite east through the Clarke belt to 153E. Here it has been leased to Agila Satellite as an interim bird until their own Agila 1 comes on line sometime late in the first half of 1997. The Agila operators have not released much detail about their interim use other than to plan for coverage of a Filipino Southeast Asia conference in mid-November. The major unknown is whether the Filipinos will utilise global powerhouse transponder R6 (3675 MHz; RAJ occupied this position) at all. Subic Bay control for Rimsat believes it is unlikely R6 will be turned back on from 153E but if it is, strong signal coverage from whomever occupies this transponder is assured in Australia, New Zealand and points east. The Russians are able to gain important foreign currency earnings by this interim lease of their former 130E Rimsat bird; equally unannounced is the future deployment of this satellite after Agila takes over the spot. Rimsat/Agila at 153E has an inclination of +/- 1 degree which will increase to +/- 1.5 degrees by July. This level of inclination means dishes larger than 3m in size now must track the satellite to keep it in full view; by July dishes as small as 2m will require tracking. Note: As of October 28, 130E was still active with Laos TV on IF 1375. No word on why the satellite did not move as previously scheduled.

Filipino RPN-9, briefly in FTA analogue during July and part of August, then converting to Scientific-Atlanta digital, continues to operate on Rimsat 142.4E (IF1375) using S-A MPEG 1.5 (i.e., the older D9222 receiver). However, RPN plans to shift to 153E and upgrade to PowerVu MPEG-2 sometime before the end of December. Those with D9222 receivers can access the RPN-9 feed which is sharing a transponder with Manila English language telecaster ABC-5 but cannot gain access to the actual programming because of conditional access limitations. There are fewer than 30 authorised receive sites for the RPN-9 and ABC-5 feeds at this time utilising the older style S-A digital format. When the services upgrade and move to 153E, as many as 100 cable TV distributors in the Philippines will also gain access to the "Filipino Bouquet."

EM TV, Papua New Guinea outlet for Australian Channel 9 services, believes it has less than six months remaining before it must make a decision to move from Rimsat at 142.4E to another satellite. The broadcaster primarily serves DTH and cable dishes in PNG but has a sizeable following beyond PNG as well. EM TV began encryption of some of its sport and US network programming during September (see SatFACTS September 15, p. 16). Decision time is fast approaching because of the daily-increase of the inclined orbit movement of 142.4E. As the orbit figure 8 pattern increases, it becomes increasingly difficult for satellite dishes to stay locked on the EM TV service. The 142.4E satellite presently is moving +/- 0.7 degrees which means 12 foot aperture dishes must now track it. By mid 1997, the inclined orbit extremes will be +/- 1.15 degrees which is the critical point for 8 foot dishes to begin tracking. EM TV would like to be off of 142.4E by that point in time but has few viable options for a new satellite. Their most desired new home would be one of the two new Pacific Intelsat 800-series satellites (at 174E and 180E), both of which offer interesting footprint options. One option is for a zone beam, that would place a 36 dBw footprint centred on Indonesia but with 34 dBw into PNG. Another option is a western hemi beam that would be 36 dBw or hotter over a wide area from SE Asia down through PNG to include New Zealand and Australia. The bad news is that if EM TV selects the Indonesian zone beam, coverage into the south Pacific will be markedly reduced in level (too low in level for DTH as well as most cable TV dishes); see map p. 10 SatFACTS February 1996. A firm decision of where EM TV will move is

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-Satellite Launch Schedule Update-

The uncertain world of which satellite will actually launch within a specified time frame remains every changing. The latest schedule is as follows:

November 13: Measat 2 (Malaysian C + Ku satellite, no impact south of equator)

December 17: PanAmSat PAS-6 (not for South Pacific but none the less important)

January 1997: ApStar 2R via Chinese Long March (another big gamble)

February 1997: Filipino Mabuhay (C + Ku) to 144E (a potential trouble maker with 142.4 and 145E already occupied with Russian satellites)

February 1997: Intelsat 801 to 174E (to replace 701); this one could have significant impact on Pacific satellite world with both C and Ku transponders reserved for television programme delivery by firms anxious to reach Australia and New Zealand

March 1997: Thaicom 3 with C band coverage to Australia expected by 1 January although the Intelsat satellites required are unlikely to be in service before April 1997 (174E) or September (180E)..

Palmerston North headquartered Technicom Internet Services Limited (TIS) is boasting the creation of teleport facilities to be located at Adelaide, Auckland, Brisbane, Melbourne, Norfolk Island and Sydney. The firm, which appears to be "on paper only" at this stage, is offering through-teleport connection to Internet via satellite connections that avoid dealing with existing Internet gateways in both New Zealand and Australia. They claim the availability of a (NZ)$5,000 package which includes a Ku-band satellite transceiver that can be located at the user's site. A 64kbps data channel through the dedicated satellite terminal is priced at $4,500 per month. The firm in a release says they will use Cable & Wireless as well as PanAmSat facilities for interconnection and that "*all New Zealand ISPs will be connected directly to our Sydney, Australia site*," presumably through the Ku-band transceiver utilising PanAmSat PAS-2. If all of this seems too good to be true, it probably is. CTD could not obtain verification from PanAmSat that any such programme is underway and in fact was told, "*A plan to utilise PAS-2 Ku-band for a number of 64 kbps channels is probably not technically feasible given the design constraints attendant with this satellite.*" (TIS: Gerry Donachie, tel 64-6-355-5361 and fax 356-5295).

Customers of Palapa C2M analogue pay TV package (HBO, TNT/Cartoons, Discovery, ESPN) have been advised by at least one Jakarta source they will receive without cost a "*new, digital IRD unit*" for future reception of the Indovision package. Details are lacking but this does suggest the long term continuation of the present analogue service could be in question. Or, Indovision which manages both the analogue package and the new Murdoch programmed digital service may simply be looking for additional digital customers by starting with the analogue customers as a base. It is likely the "*free digital IRD*" offer is conditional; i.e., the recipient must subscribe for new services before the box is shipped!

Comsat, US participant in Intelsat, has filed notice with (US) FCC stating it intends to participate in creation of Ku-band Asian direct to home (DTH) satellite project using orbital location of 95E. Intelsat board meets in December to select supplier for new satellite. A satellite at 95E would miss most of New Zealand (barely) with a look angle of 1 degree in Kaitaia, 0.4 degree in Christchurch, and 1.5 degrees in Greymouth and Dunedin.

Sky Network continues to test various Ku-band transmission sources as CTD goes to press. Digital format tests are underway using Intelsat I174E on the new-to-the-Pacific downlink frequency of 11.463 GHz (vertical). The area behind the Sky Auckland facility is alive with as many as two-dozen Ku-band satellite dishes as part of the rigorous testing programme which has also included on ground tests south to Dunedin. Some analogue testing has also been done using the same Ku transponder(s) suggesting that Sky may be coming to the realisation that at least initially they may not be able to obtain delivery of the required digital transmission and reception hardware. Sky nurses the hope that at least for public relation purposes they will be able to deliver test match coverage via satellite as early as February 1997.

STAR TV launch September 19th of new 11 programme channel MPEG digital package was a "soft launch" because of shortage of receivers. By mid-October, STAR's Jakarta headquarters was admitting that fewer than 50 of the DVS211 receivers were actually in hand from Pace with no sizeable quantity anticipated before mid to late November. The Jakarta office of STAR and their regional office in Manila do not agree on access to the programming beyond the primary Asian target area. Manila is offering Channel V, for example, to cable operators south of the equator for US$0.50 per cable subscriber per month while Jakarta is saying Channel V will be free to air even in digital (and therefore not subject to payment anyhow).

Network Ten has switched from analogue to Scientific-Atlanta PowerVu television format with its 1/2 transponder format hemi-beam linking service on Intelsat I180. The S-A system provides a bouquet of 6 possible programme channels, one of which is in use by Ten, two are leased to the Australian Broadcasting Corporation and another is leased by Fairfax Limited. The signals are uplinked from Keystone Communications in Culver City, California and received by Ten at Oxford Falls. Prior to switch on of the new service, Ten was using a temporary 3:1 MCPC digital video package built around the D9222 receivers. The present system is 6:2 MCPC using the D9223 receivers.

20 channels of US DirecTV satellite delivered programming will be available on seat-back display screens for all Continental Airline planes flying within USA by summer of 1997. System will receive signals from one of three DirecTv satellites, send 20 channel package to traveller displays.

ASkyB, Murdoch consortium planning launch of Ku-band competitive DTH pay TV service, wants to include "*local TV service signals*" within bouquet offered to subscribers. Existing US Ku-band DTH fails to deliver local TV signals which means DSS viewers must also have suitable (rooftop) antenna and switching system to allow them to access local TV as well as satellite TV. Echostar had originally proposed making local T V available through packaged satellite feeds; ASkyB is second announcement in this area. Both plans have draw opposition since only "*selected*" local TV would be included in satellite bouquets, creating competitive disadvantage for those left out of bouquet. The move to include local TV is seen as way of switching viewers away from any connection to terrestrial TV services.

-Ted Turner v. Rupert Murdoch-

CNN/Turner Broadcasting father Ted Turner and News Corp head Rupert Murdoch have never shied away from blasting one another in the media. In an argument involving the launch by Fox of a new 24 hour (competitive to CNN) news service to American cable TV, Ted Turner is reported to have compared Murdoch to "the late Fuehrer." Murdoch did not directly respond but News Corp General Counsel Arthur Siskind issued a statement saying "such venal rhetoric has no place in civilised society" and labelled the remark "deeply offensive." Murdoch has previously said he will "bury Ted Turner and his empire" with his new Fox news network. Week later, Turner issued apology but not to Murdoch, saying he regretted choice of words while explaining he was making reference to similarities between Murdoch and Hitler in way "Hitler managed the news." Apology went to Anti-Defamation League.

Discovery Network, distributed in New Zealand via Sky and through cable, has agreed to launch new programming channels world-wide. Discovery presently breaks typical broadcast week into themes and with the expansion plan some themes will become pivot for entire network carrying theme. In deal, Discovery will launch 6 digital channels for U.K. market as early as summer of 1997 as well as throughout Europe for DTH and cable markets. BBC will become a new programming source for Discovery and will supply material under BBC "brand" in US. Discovery will have "first option" on new BBC material, but deal will not affect existing BBC rights holders such as Television New Zealand for as long as their present agreements run. Discovery completed installation late in July of new 6 programme channel uplink in Singapore and is presently using one of these six channels to send time-specific programming to New Zealand and Australia, other channels for other markets (Taiwan, et al). There has been no announcement yet when the expanded number of channels may be available here and will in fact require Discovery to add additional "bouquet spectrum space" to accommodate any growth. An expansion of Discovery beyond its present single programme channel will present programming problems for Sky and others now struggling to find sufficient "air time" to carry the present schedule; at six times the product, some of it is likely to become available to additional outlets since it is unlikely Sky could agree to carry all six channels when available.

PanAmSat is providing 4 MHz segment of a transponder on PAS-2 for connection of Indonesian PT. Primacom's Internet connection with North America. The Indonesian firm is utilising the C-band Pacific Rim Beam to bring Internet into the country as well as to potentially re-serve clients with its CBN.Net link.

Taiwanese firm Rebar Tele-Communications Co. Ltd. has signed a 5-year lease with AsiaSat 2 for a 27 MHz C-band segment. Rebar plans a late 1996 start of a digital TV distribution package of cable television programming including sport and cartoon channel "U3." The transmission format and the As2 transponder leased are not known. Rebar has also signed an agreement to lease a 9MHz segment on As2 Ku-band which it plans to use for SNG (satellite news gathering).

Intelsat, after completing interoperability testing of satellite receivers and uplink MUX (transmission creator) devices, has issued final report which seems to disagree with its own earlier report. As reported in CTD for July (see "DVB Compliant Is A Joke," CTD 9605, p. 2), Intelsat found most DVB MUX (transmission sources) could only be accessed by receivers (usually from the same manufacturer) purposefully designed for that particular variation of MPEG. Scientific-Atlanta press agentry following tests painted their equipment as "*the winners of the contest*," claiming more of the non-SA sources could be "*received*" by the S-A receivers than any other crossbreeding combination. Intelsat in final report now amends earlier statement of lack of interoperability with generalised statement that "*All digital compression systems built by various manufacturers taking part in trials are compatible.*" Reading further in report, one finds disclaimer "*Systems did not come out of the box working with this degree of compatibility, but it is possible for all of the receivers to work with all of the MUX (transmitters) in a laboratory with factory engineers making modifications.*" This is a little bit like saying a soapbox derby racer can compete at the Indianapolis 500 "*provided a team of factory engineers are on hand to modify the soapbox racer to the standards of Indianapolis.*" In as much as none of the MPEG receiver manufacturers routinely supplies a "*factory engineer*" with each receiver sent into the field, the bottom line remains the same as CTD reported in July: "DVB Compliant Is A Joke." Shame on Intelsat for kissing butt with its most recent news release on this subject.

UK Heritage Secretary Virginia Bottomley has signed ordered banning future sale of Rendez-Vous hard porn adult channel smart cards in England. Service claims 20,000 smart card subscribers in England. Present card holders will be allowed to view until their cards "run out." Rendez-Vous recently lost transponder on Eutelsat satellite, moved to Russian satellite at 40E (see CTD 9607, p.9).

US DSS pricing war, which has seen Ku-band DTH DSS systems drop in consumer retail pricing from US$795 at introduction to low of US$199 (when combined with purchase of first year programming package at US$300), has struck new low: US$48 for the satellite system hardware. Discount price retail outlet Brandsmart is selling off its remaining inventory of RCA "generation one" product at this ultra low price but only when buyers also agree to purchase $299 programming package. Projections claim direct to home subscribers via DTH services will grow to 7 million US homes by end of this year; 19 million by year 2000.

Japanese early entrant DBS service Perfect TV! restarted its launch October 1st. Perfect has been plagued with software glitches affecting most of its 57 TV channels and the in-field set-top IRD (decoder) units as well. An earlier start in June was restarted in August and now October 1. Perfect claims 35,000 receivers have been sold for the service to date (virtually all are Sony), forecasts 300,000 subscribers by end of this year and one million in three years. Perfect sells all channels on an ala carte basis; subscribers make up their own "packages" from 57 channel universe offered. Most channels are in range of US$5 per month.

ApStar 1, 138E, has never been received south of the extreme northern edges of Australia. On October 28, observers in New South Wales reported first time reception on 4m siuze dishes from CNNI (IF1170, Vt) and other signals. Quality is poor but significant change from previous lack of any signal; observations continue.

Digital TV and Radio

Adding HDTV capability to standard TV receivers will add US$535 to cost of "average" receiver according to study done by Microsoft but pricing differential would drop to $135 extra for HDTV option within 4 years. Microsoft did study to point out that US adopted interlace scanning technique without properly considering how this will impact on consumers. Computer industry has favoured progressive scanning which it says would drop cost differential to US$300 initially and $100 within 4 years. Computer people remain unhappy with FCC decision to adopt interlace scanning technique and contend progressive scanning makes more economic sense. Computer displays routinely utilise progressive scanning and computer industry would be closer to achieving PC + TV display hardware if progressive was selected.

BBC was scheduled to release invitations this week for use of "*extra capacity within terrestrial digital TV multiplexes*" now under construction. BBC will use one multiplex for its own multiple programming channels, existing non-BBC analogue broadcasters will utilise 2nd and part of third. The balance of 3rd multiplex as well as three additional transmission packages will be available to other programmers. To qualify, applicants must agree to provide digital TV service within 2 major geographic areas inside of 2 years as well as agreeing to covering all of England within four years. British plan is to launch terrestrial digital TV within next 18 months, run system parallel to existing analogue for ten to twelve years, and then "retire" the analogue equipment.

US Public Broadcasting System (PBS) cut all ties with analogue distribution in October 16 switch to MPEG digital network feeds. This is the first major broadcast group in world to abandon analogue format. PBS starts now at tape recorder with digital and stays digital through full storage and playback of programming and with Ku-band satellite distribution to member stations.

US backed in-band on-channel digital radio format has been struck another serious blow following leak of engineering study involving AT&T Lucent Technologies and others. Report states that IBOC creates reduced AM (FM) coverage for primary analogue service, suffers from terrestrial interference, produces poorer quality audio for both the DAB and analogue services. Following report, tests in San Francisco of IBOC have been postponed, may be dropped altogether. CBS network and Westinghouse remain backers of IBOC.

Internet is latest excuse for degradation of US telephone networks. Regional ex-Bell operating companies are complaining to FCC that heavy use of the Internet service has reached "dangerous levels of clogging" the intra-city networks, predict inter-city switching facilities will soon also feel pinch. FCC study recently released suggests that if telephone companies in US are required by law to make Internet connection available to every school classroom in country, cost would be in region of US$10B spread over 5 year period. As big as that number may seem, FCC points out this would amount to only 0.2% of the gross revenues for the telephone firms in the same five year period.

Philips will be semi-self-proclaimed "*One stop shop for patent licensing to DVD players*" under joint agreement between firm plus Matsushita, Sony and Toshiba. Thomson pointedly has stated it will administer licensing of its patents in DVD field, will not join "*patent pool*." Philips plays a similar role in administering patents in the music CD field. USA launch of DVD is off for this calendar year although Matsushita will debut DVD in Japan using Panasonic brand in November. Pioneer will also offer four DVD models in home country late in November or December. Additionally, Toshiba will launch DVD player (model SD-3000) at US$700 tomorrow (November 1st), and Sanyo will introduce DVD-5000 model December 1 in Japan. Software copyright remains significant unresolved issue as we have previously reported in depth (CTD 9603, p. 15; 9605, p. 16; 9606, p. 16). One Warner (movie) replicating plant in Pennsylvania is said to be working "*overtime shifts*" to prepare DVD (discs) for the year end marketplace (presumably in Japan but given the ease with which the players can be transported world-wide, that may be wishful thinking). Warner admits that because no copyright standards have been set, the initial movie products being duplicated "*are not encrypted*" and may not even be "*copy protected.*" Warner, however, also insists "*these discs are for demonstration purposes only and* *will not be offered for retail sale until the copyright protection issue is resolved.*" CTD had suggested that the first issues would probably become valuable "*collector discs*" as they were unlikely to be protected in any way to prevent small or large scale illegal (i.e., outside of copyright law) duplication.

Sharp has shown off 40" LCD SVGA screen which has been created by "*seamlessly joining pair of 29" panels.*" Panel measures 40" wide by 32" tall but is only 1.9" in depth.

Consumer Reports, major US magazine that exists by testing products and reporting on what it finds, has identified what it considers best of camcorders currently in marketplace. Both are Hitachi products, one Hi8 and other standard 8mm. For best repair history, CE found Panasonic VHS-C and Sony 8mm models to be leaders.

German firm MediaNet in partnership with German satellite telecaster Deutsche Welle is set to begin November testing of VBI (vertical blanking interval) transmission of Internet data to DM115 (cost) private decoders using DW's AsiaSat 2 transmission service. System will be described in some detail in December-January ("Holiday") issue of PC New Zealand Magazine on news-stands early in December. Service will allow anyone with DW satellite dish system to access Internet for DM14.95 per month, unlimited, 24 hours per day. An American educational TV network has come up with a similar concept. Because educational TV does not carry advertising per se, there are time periods between programmes which public TV channels now fill with station idents and background music. US FCC has approved plan for stations to test use of a 2 minute per hour time segment to transmit high speed computer (Internet) data to appropriately equipped PCs. In the first test, 432 kbps data will flow to PCs which in two minute period will allow 51 megabits of data to be downloaded. This is the equivalent of approximately 34 discs filled with data and is presently 30 times faster than a typical 14.4 kbps telephone modem.

Consumer Electronics

DVD market forecast by noted US investment firm paints less than high dollar return. Vernois, Subler & Associates forecast 5% market penetration within five years of product introduction. Study points out DVD is a playback only device, draws parallel with early VCR marketing which was also playback only. "*Until DVD offers home recording as well as playback, growth will be slow*" report concludes pointing out that combination of video imaging, computer games and music through one player "*makes little sense since all three activities currently tend to take place at three different locations within a home.*"

DirecPC from the same Hughes folks that created DirecTv launches through 20 selected retail outlets in California by middle of November. Using transmission capacity on Hughes built Ku-band satellites, DirecPc package with 21" elliptical Ku-band dish, 16-bit ISA bus card adapter for PC, Windows 95 compatible software and connection cables will sell for US$699 (list). Users will pay $9.95 per month flat fee plus normal Internet access charges to receive access to Internet at 400 kbps, typically 24 times faster than 28.8 kbps modem.

First digital video (DV) tape format camcorder with widescreen format has been introduced by Sharp. Unit has trio of CCD imaging devices, 4.3" wide 16:9 LCD monitor. Images are squeezed horizontally for recording, expanded to equivalent of 480 lines (NTSC) when played back on widescreen. By comparison, letterbox NTSC display technique produces 360 line image. Camera has 2 Mb flash memory allow it to be used as digital still camera as well as video. Pricing is US$2,315 with $230 accessory allowing digital stills to be loaded onto PC hard drive.

French government has announced tentative decision to sell state owned Thomson S.A. to Lagardere Group which in turn plans to sell consumer electronics subsidiary Thomson Multimedia to Korean firm Daewoo. The result would be the world's largest colour TV manufacturer, surpassing in annual production Matsushita, Philips and Sony. Details of "sale" are hidden behind French security blanket but it is believed French government is making US$2.1B injection of capital in order to rid itself of Thomson. Daewoo was but one of several world-class firms interested in taking over Thomson which had world-wide TV set sales of 8 million in most recent year. When combined with Daewoo's 6.5 million, total easily surpasses Sony at 10.7 million plus Matsushita and Philips who each claimed 12 million in last year. Daewoo has promised to retain TMM headquarters in France and to add 5,000 French jobs as result. Daewoo was unlikely suitor for TMM from beginning, being well down ladder in terms of its electronic production even within home country of Korea. Consumer electronic sales for 1996 for Daewoo are expected to be in region of US$5.36B. But real strength of company is in shipbuilding, hotels, construction and car manufacture with total combined sales of US$36B.

Digital still cameras with entry level US$100 pricing are now common in USA, Japan and Europe and typically have 2 Mb flash memory storage cards. The present cards have a cost to manufacture in region of US$15 per Mb but prime supplier of cards, SanDisk, sees pricing dropping to $10 per Mb by third quarter of 1997. Result, SanDisk predicts, will be larger capacity cameras at lower pricing. Flash memory pricing drops will directly impact use of the cards in other devices including Cellular telephones and digital audio recorders.

Philips economy minded management (CTD 9607, p. 13) is laying of 2,000 workers at Tennessee plant which is being sold to unnamed group. Company has also changed philosophy of servicing dealers for Philips brand products; those not purchasing US$1m per year as minimum will now deal with distributors. With sale of Knoxville facility, new USA headquarters is planned, probably in Atlanta although three other locations are being considered. In California, only 15 employees remain with Philips Media after layoff of 120, a direct result of the failure of CD-I to take off in marketplace. Philips had withdrawn CD-I from consumer marketplace in January, said it would regroup and concentrate on business applications. Even that has apparently not worked and CD-I is now largely an industrial product primarily serving users in Asia through California facility. Firm has also postponed marketing plans for desktop PCs, spokesman noting, "*It is now our belief the marketplace does not need another PC with a brand name on it.*"

European Commission has issued 'Green Paper' discussing the challenge of regulating Internet. Paper comes to conclusions that self regulation is the preferable method to control access to materials deemed not suitable for youngsters or the public at large. Paper sets out 9 issues which it believes require further study and is asking for submissions by February 28th. A web site to encourage debate on the issues is planned.

US$20 black and white TV camera on single chip is available from Marshall Electronics, Culver City, California. Camera requires addition of lens, operates in excess of 24 hours on 9 volt battery. Details at http://www.marshall.wincam.com.

Hyundai has announced US$3.7B investment in Scotland semiconductor plant, creating 2,000 jobs. Korean competitor LG Electronics recently began construction on US$2.6B semiconductor plant in Scotland.

Cable/Fibre/MMDS/Pay TV

Asia-Pacific Venture television programme package from US based international cable TV operator UIH has "embargoed" release of information concerning the status of their plans to bring US and European programming to Australia and Pacific. The firm met with both Australian and New Zealand cable, MMDS and related firms in mid-October in Sydney where it unveiled a programme package of substantially more than 10 programme channels. The programming package contained some surprises, especially in the sport and movie content areas; all good news for cable TV operators. UIH is owner of Saturn in New Zealand, holds extensive programming and MMDS rights in Australia, and is an investor in Filipino cable TV systems. It also holds a right of first refusal agreement with Intelsat to utilise one or more transponders at 174E, 177E or 180E. The firm claims it will not launch its programme package service until it can be on a geostationary satellite with adequate coverage of the primary Australia/New Zealand/Filipino markets. Increasingly the earliest start date for the programme package would appear to be March (1997) with a serious possibility the service will not get underway until mid 1997. One of the primary hurdles remains the status of Australia's pay TV marketplace (UIH is amongst the investors in Galaxy). On the belief that many of the problems besetting the Australian pay television world will either go away or change dramatically after the expiration on July 1, 1997 of present foreign programming restrictions, UIH may well hold off launching the APV service until that date. (Editor's note: Although we have agreed to withhold detailed information on this service, we can tell you the programme channel line-up is very impressive and will do a great deal for the growth of cable television in the Pacific region.)

NBC Asia has agreed to new cable affiliation agreements in New Zealand, including Taupo Cablevision, Inc. As reported in CTD 9606 (p. 19), NBC was basically telling smaller cable systems they were not interested in any affiliation which produced less than US$1,000 per month for the network income (see SatFACTS October 15; p. 1). This is probably not a change of policy but rather recognition that some cable systems had applied for affiliation and were accepted under older rules early this year before the "$1,000 minimum" policy was adopted. Of interest, First Media (Telecom NZ) is not carrying the NBC Asia schedule; only selected programmes from the 24 hour day. Only Saturn in Wellington and Far North Cable TV Ltd. (Doubtless Bay) are full 24 hour affiliates and both must respect certain programme deletions where copyright clearances for NBC have not been negotiated with programme suppliers.

First Media (Telecom cable TV) release dated late in September advises "*Installation in cabled areas costs $39.95 and there is a special introductory offer of $19.95 per month for all existing First Media Channels (except TCSI) until at least the end of October. From November onwards, First Media customers can expect additions to the range of viewing and pricing choices. The options will begin at $10 per month for a bundle of four television channels and range upward from there.*" Contact is Quentin Bright (0800 367 633).

Sky Network (HBO) Movie channel is shifting start time for movies from present 12 noon to 4PM effective 1 November in favour of programming with Cartoon Network children's programming from 6AM to 4PM daily. Sky became the official "representative" for Cartoon here during August, a situation that has aroused considerable consternation on the part of cable operators who in some instances are finding Sky difficult to deal with. This reduces by 2 to 3 movies the number of films Sky shows daily (and with that a reduction in operating costs) although they will stay on the air all night on Sunday as a partial make-good to customers and also promises to show more movies on their Orange channel as well.

Sky International horse racing, currently available on AsiaSat 2 through B-MAC analogue decoders, hopes to convert to MPEG digital using the Pace DVS211 receiver before the end of November. The racing service has been approved for cable carriage at Greymouth and Doubtless Bay (NZ) with restrictions as to the races carried. That the much in demand DVS211 can be supplied to all of the potential users (STAR's new C2M digital service also requires this receiver) in a timely fashion is a big unknown.

TVSN shopping network appears to be purchasing "down time" from Australian public service international telecaster ATVI, Palapa C2M. TVSN revenue for the cash strapped ATVI may help the Australian service stay alive; there has been considerable political pressure to "shut it down" as an unnecessary expenditure of the Australian government. TVSN has a monthly programme schedule which indicates the category of products to be featured within each time block (Vanessa Milburn, tel 61-2-9513-8000; fax 61-2-9513-8100).

Cable TV digital standards moved step closer with announced agreement between two largest proprietary camps; General Instrument and Scientific-Atlanta. De facto standard is possible because between two firms they control estimated 80% of cable TV hardware marketplace for set-top decoder and headend encryption equipment. Deal, to be signed by year end, confirms single standard for core encryption, modulation and forward error correction techniques. Cable industry welcomed news since it will allow them to "mix and match" hardware from S-A and GI as they wish. The firms will form a patent pool allowing each to draw from the pool without royalties. Third parties wishing to sell products to the cable industry in the future will have to be licensed to use the patents.

Telecom NZ parent Bell Atlantic has shut down Video On Demand (VOD) trial in state of Virginia with statement explaining, "*asymmetric digital subscriber line technology, used during the tests, had reached point of diminishing returns.*" ADSL is technology that allows existing copper telephone wires to carry single channel of television on a dial-up basis and requires a purpose-built ADSL hardware unit at each subscriber home. The cost of the in-home unit has stayed in the range of US$3,500 which makes the single channel delivery technique very expensive to implement. Bell Atlantic says that in a universe of 1,000 test homes and with a software (movie) base of 700, the average home ordered 3.6 videos each month. BA claims this is, "*about the same as the same homes previously rented from local video stores.*" BA believes it is the technology, not the marketing that is weak and accordingly will be upgrading the system with a hybrid fibre and coaxial network similar to that now being constructed here in New Zealand by First Media (see report, p. 7).

TCI, part parent of Sky Network here, reported US$184m loss in quarter period ending June 30th. TCI is now in midst of launching Internet access and two-way cable telephone for first of its 12,987,000 cable subscribers in US.

Time Warner, also part of the Sky Network ownership, admits it has slowed down the introduction of telephony services by cable and, "*may be rethinking the advisability of entering telephony business because regulatory uncertainty is so pervasive.*" TW "debt" is now estimated at more than US$17B, partially the result of its purchase of Ted Turner interests in broadcasting, cable and sport.

Fox Kids Network, distributed via satellite in English, Spanish and Portuguese initially to 19 countries, goes into operation November 1st.

Black ethnic movie channel to be called BET Movies/STARZ is being launched by Black Entertainment Television (BET) and US cable and DTH movie firm Encore. BET on Jazz is a programme channel now being exported into Europe and Africa for cable and DTH and it is likely to be available in the Pacific before end of 1997.

Sri Lankan pioneer pay TV broadcaster Uoosoof Mohideen, operator of Dynavision, will be in New Zealand during the month of December. Dynavision carries CNNI through terrestrial UHF transmitters and will be expanding the number of programming channels during 1997. Those with an interest in visiting with Uoosoof while he is in New Zealand may contact him at (fax) 94-1-594-042.

French television programmer TV5's Guy Muller, available on Palapa C2M in free to air analogue, will be visiting in New Zealand to meet prospective affiliates for their service November 16-22. He will be in Auckland on the 16th and thereafter in Wellington. You may contact him directly at (fax) 33-1-40-62-32-02 or through Daniel Guillaume at the French Embassy in Wellington.

Terrestrial Broadcasting

Whangarei has been added to the Trackside (TAB) telecast coverage area; channel 56. Trackside expansion has been following on with Sky expansion of terrestrial facilities which opened up its first Whangarei channel in June. Further expansion of Trackside is likely only via satellite when Sky sorts out the Ku-band project now under study. Regions without Sky (and Trackside) are Far North, Taumanunui, Oamaru, Gisborne, Central Otago and the West Coast of South Island.

Radio New Zealand is exploring plans to expand National Radio into up to a dozen new areas using satellite relay of its programming. Unattended FM band transmitters in the 10 - 22 watt class would receive transmissions originating from Auckland through either Optus B1 or B3 using typically 1.8m size dish antennas. Seed funding would come from New Zealand On Air with a three year project contract but in each case local financial support would be required as well. The

New Zealand On Air research indicates the most popular home grown product categories are documentaries and children's programming. NZOA data indicates 13% of all television product now on the three national networks originates with NZOA funding. A World Wide Web site is now maintained by NZOA: http://www.nzonair.govt.nz.

Update on time shifting. CTD 9706 (p. 6) reported on an interesting, relatively low cost method of time shifting television programming for broadcast, cable or institutional use developed around the semipro model Mitsubishi HS-M1000 S-VHS format tape machine. Wellington source Melco Sales (NZ) Ltd. (John Cavill at 64-4-560-9100) has created software run through a Windows 95 equipped PC which allows the S-VHS recorder to select on demand programme segments for taping and playback. We also reported on several cable TV systems utilising this system to compensate for unfriendly programme timings, in particular those using Hong Kong as a time base. With New Zealand now on summer time, programmes from Hong Kong, Singapore and elsewhere in Asia sent here via satellite are 5+ hours out of whack with local clocks placing most prime time programming into the after midnight period. In an additional month of first hand experience, users report the system uses software which is maturing weekly. Initially, the software would not allow the LP (long play) speed of the HS-M1000 to function thereby limiting use to 3 or 4 hour maximum periods. Melco sales in fact does not encourage use of the LP mode, concerned that tape heads will degrade and wear at a rate which the user will not find economical. Under some duress, they have modified the software to allow LP use but the user assumes responsibility for head life. The software also does not like tape stacking of programming with less than 30 minutes between taped events and will not necessarily stack programmes in precise in and out cuts. The effect of this is that a 30 minute programme may by software necessity require 32 minutes of tape time which means 2 minutes of programme material following the desired 30 minutes ends up as an undesired "buffer" at the lead to the next event taped. When the software is utilised to provide a continuous time shifted record and playback of material (up to 8 hours in length) users report it performs very adequately. Our September report should also have indicated that raw tape stock selection is very important: TDK XP240 S-VHS (SE-240) is one brand and version which has proven to be able to take the beating of the LP mode.

Free to air German telecaster Deutsche Welle, in authorising use of its programmes by New Zealand TV stations, is reserving certain rights which are not included in their cable television contracts. For example, DW Television Magazine is limited to two repeats while DW Television documentaries are limited to three repeats. And, "Bildspaziergange" (a programme depicting German cities and landscapes) may only be retransmitted in "real time," not by taped delay. One programme which reports on German football is not authorised for rebroadcast at all.

Proposals to revamp US system of allocating frequency spectrum space to users are moving closer and closer to the New Zealand system adopted six years ago. Latest proposals suggest US (FCC and treasury) could gain from US$100B to 300B in revenues by selling "*management rights*" to slices of spectrum, using "*Spectrum Registry*" to "*record deeds and technical information*" about each rights holder. If that sounds familiar, there is good reason.

Long delayed Philips "ghost canceller" system which eliminates multiple images on screen caused by irregular terrain and bouncing TV signals has finally gone into marketplace in Chicago. The product was field tested in New Zealand and Australia in 1995, has been promised first as set-top adapter box for existing TVs, then as option built into new Philips TV receivers, since that time,. Actual product on sale now in Chicago is former (set-top unit) at US$199 and is being sold under Philips owned Magnavox branding. No word on when the product will make market entry outside of USA.

CBC CEO Perrin Beatty, denying that "*public broadcasting has outlived its time,*" announced plan to cut work staff and expenses and improve programming in face of anticipated US$414m shortfall in projected 1998 budget. CBC is under pressure to become "*less commercial*" at same time it is expected to cope with US$350m cut in government subsidy in year beginning March 1997. CBC believes, "*to stay in business, CBC must act more like a business.*" They hope to do this by "*finding a niche, using less American commercial programming and expanding sale of programme product outside of Canada.*"

The Dates: January 21 - 25, 1997
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The Event: **South Pacific Region Satellite and Cable Show (SPRSCS '97)**
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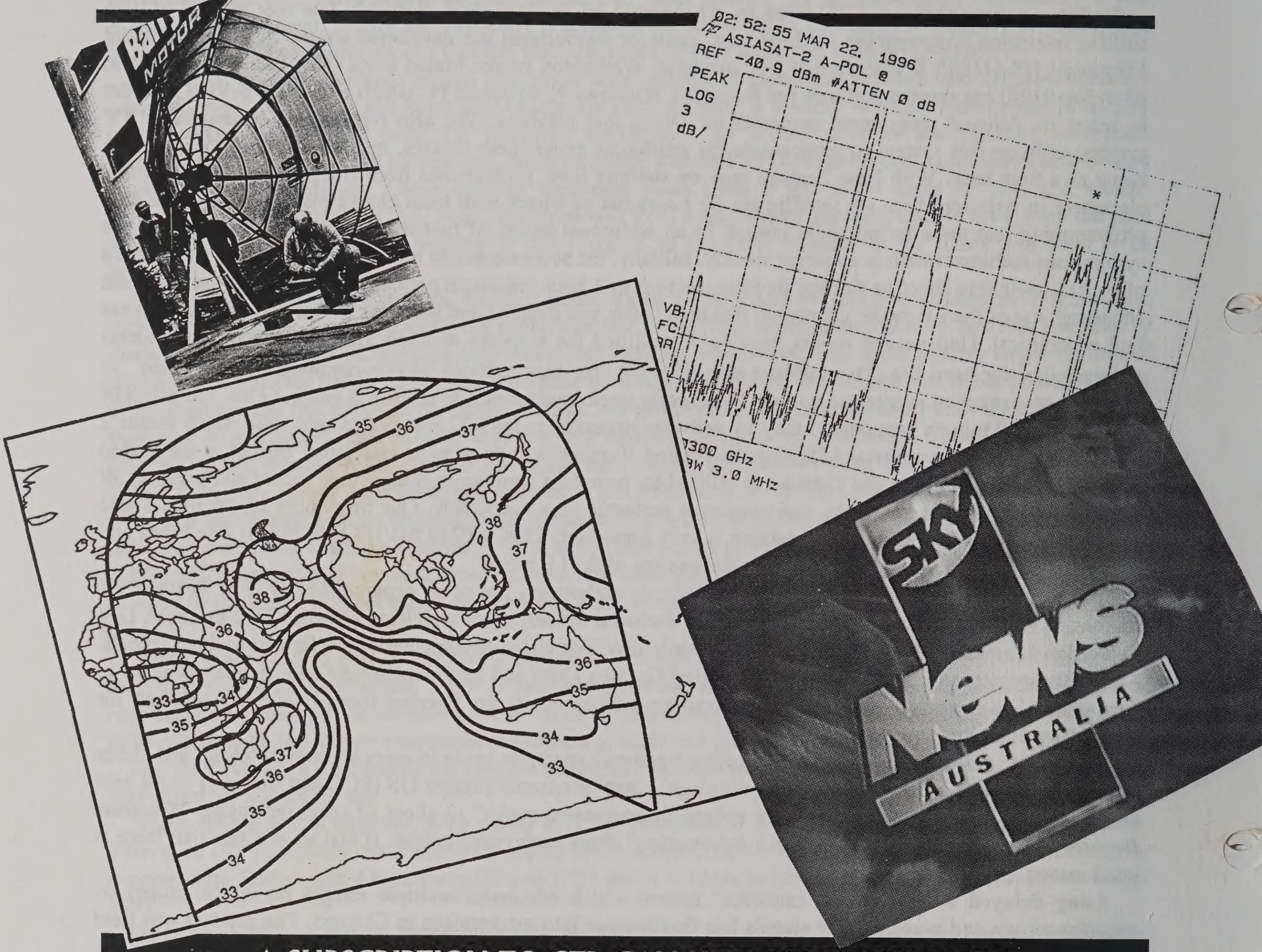

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